

UNIT 10 AREA Review Packet

**TARGETS A-C**

- 1) A rectangle has a height of 19 in. Its **area** is  $627 \text{ in}^2$ . Find the base.

$$627 = b \cdot 19$$

$$b = 33 \text{ in}$$

base = 33 in.

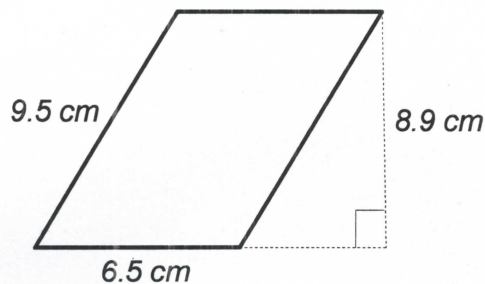
- 2) A square has an area of  $64 \text{ ft}^2$ . Find the length of one side of the square.

$$64 = s^2$$

$$s = 8 \text{ ft}$$

side = 8 ft

- 3) Find the **area and perimeter** of the **parallelogram** shown.

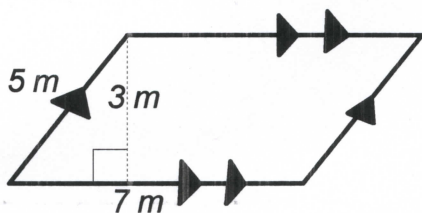


$$\begin{aligned} A &= b \cdot h \\ &= 6.5 \cdot 8.9 \\ &= 57.85 \text{ cm}^2 \end{aligned}$$

Area  $57.85 \text{ cm}^2$

Perimeter  $32 \text{ cm}$

- 4) Find the **area and the perimeter** of the **parallelogram** shown.



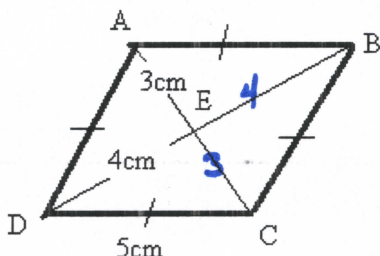
$$\begin{aligned} A &= b \cdot h \\ &= 7 \cdot 3 \\ &= 21 \text{ m}^2 \end{aligned}$$

Area  $21 \text{ m}^2$

Perimeter  $24 \text{ m}$

**TARGET D & E**

- 5) Find the **area and the perimeter** of the **rhombus** shown.

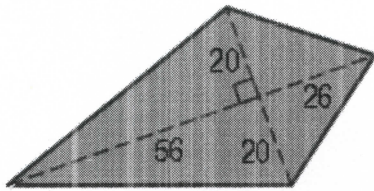


$$\begin{aligned} A &= \frac{1}{2} d_1 \cdot d_2 \\ &= \frac{1}{2} \cdot 8 \cdot 6 \\ &= 24 \text{ cm}^2 \end{aligned}$$

Area  $24 \text{ cm}^2$

Perimeter  $20 \text{ cm}$

- 6) Find the area of the given kite.



$$A = \frac{1}{2} d_1 \cdot d_2$$

$$= \frac{1}{2} \cdot 40 \cdot 82$$

$$= 16400$$

Area 16400

- 7) The area of a kite is  $187 \text{ yd}^2$ . If one diagonal is 22 yards, find the length of the other diagonal.

$$187 = \frac{1}{2} \cdot 22 \cdot d_2$$

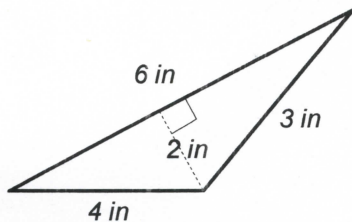
$$187 = 11 \cdot d_2$$

$$d_2 = 17 \text{ yd}$$

Diagonal 17 yd

### TARGET F

- 8). Find the **area** and the **perimeter** of the **triangle** shown.



$$A = \frac{1}{2} b \cdot h$$

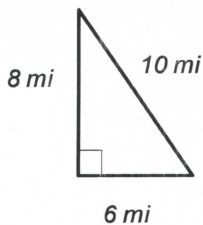
$$= \frac{1}{2} \cdot 4 \cdot 2$$

$$= 4 \text{ in}^2$$

Area 4 in<sup>2</sup>

Perimeter 13 in.

- 9) Find the **area** and the **perimeter** of the **triangle** shown.



$$A = \frac{1}{2} b h$$

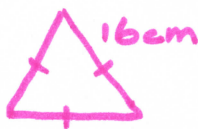
$$= \frac{1}{2} \cdot 6 \cdot 8$$

$$= 24 \text{ mi}^2$$

Area 24 mi<sup>2</sup>

Perimeter 24 mi

- 10) Find the **area** of an **equilateral triangle** with side 16 cm.



$$A = \frac{s^2 \sqrt{3}}{4} = \frac{16^2 \sqrt{3}}{4}$$

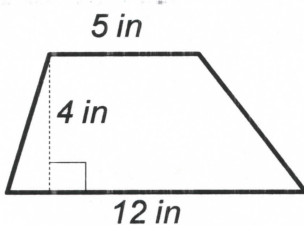
$$= 64 \sqrt{3} = 110.9$$

Perimeter 48 cm

Area: 110.9 cm<sup>2</sup>

### TARGET G

- 11) Find the **area** of the **trapezoid**.



$$A = \frac{1}{2} h (b_1 + b_2)$$

$$= \frac{1}{2} \cdot 4 (5 + 12)$$

$$= 2 \cdot 17$$

$$= 34 \text{ in}^2$$

Area 34 in<sup>2</sup>

- 12) The area of a trapezoid is  $192 \text{ cm}^2$ . If the height is 12 cm and the shorter base is 15 cm, find the length of the longer base.

$$192 = \frac{1}{2} \cdot 12 (15 + b_2)$$

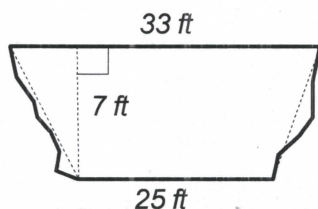
$$192 = 6 (15 + b_2)$$

$$32 = 15 + b_2$$

$$b_2 = 17$$

Longer base 17 cm

- 13) To study stream flow, a civil engineer needs to find the area of a cross section of a stream. The cross section resembles a trapezoid. Estimate the area of the cross section shown here.



$$A = \frac{1}{2} h (b_1 + b_2)$$

$$= \frac{1}{2} 7 (33 + 25)$$

$$= 3.5 \cdot 58$$

$$= 203 \text{ ft}^2$$

Area 203 ft<sup>2</sup>

### TARGET I

- 14) Find the area of a regular heptagon with apothem 8.31 in and side 8 in.

$$P = 7 \cdot 8$$

$$= 56$$

$$7 \text{ sides}$$

$$A = \frac{1}{2} a P$$

$$= \frac{1}{2} 8.31 \cdot 56 = 232.7$$

Perimeter 56 in.

Area: 232.7 in<sup>2</sup>

- 15) Find the area of a regular hexagon with side 12 cm.

$$A = 6 \cdot \frac{s^2 \sqrt{3}}{4} = 6 \cdot \frac{144 \sqrt{3}}{4}$$

$$= 6 \cdot 36 \sqrt{3}$$

$$= 216 \sqrt{3} = 374.1 \text{ cm}^2$$

Perimeter 72 cm

Area: 374.1 cm<sup>2</sup>

### TARGET I

- 16) Find the area and circumference of a circle with diameter of 18 in. Round your answer to the nearest hundredths place.

3.14

$$C = \pi d$$

$$= 18\pi$$

$$= 56.52$$

$$A = \pi r^2$$

$$= 81\pi$$

$$= 254.3 \text{ in}^2$$

Area 254.3 in<sup>2</sup>

Circumference 56.52 in

- 17) The area of a circle is  $196\pi \text{ cm}^2$ . Find the length of the radius.

$$A = \pi r^2$$

$$196\pi = \pi r^2$$

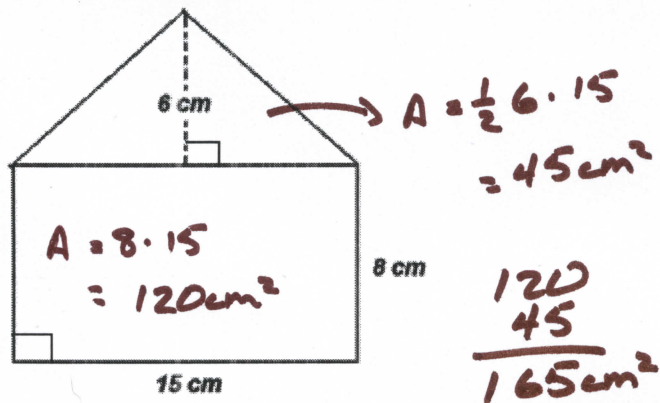
$$196 = r^2$$

$$r = 14 \text{ cm}$$

radius 14 cm

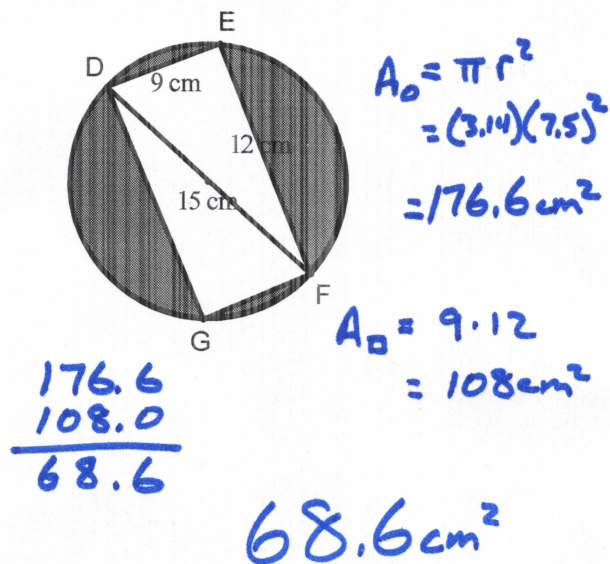


18) Find the area for the composite figure.

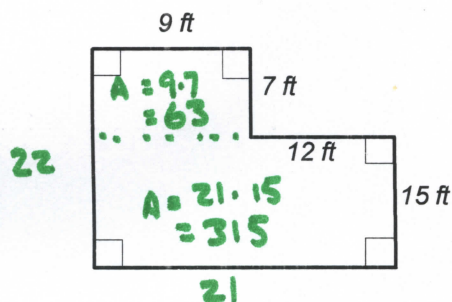


$A = 165 \text{ cm}^2$

19) Find the shaded area (hundredths place)



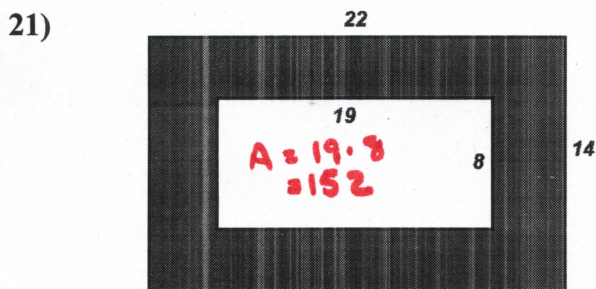
20) Find the perimeter and the area of the family room sketched below. All measures are in feet.



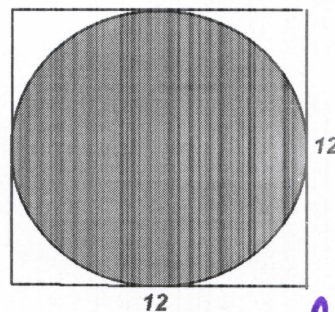
perimeter 86 ft.

area 378 ft².

For #21 & 22 find the probability that a point chosen at random lies in the shaded region.



22)



$P = \frac{156}{308} = \frac{39}{77}$

$P = \frac{113}{144}$